App. No.: 10/568,043 Docket No.: 4290220019
Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN
DERIVATISATION AND CONJUGATION
Replacement Sheet 1/23

App. No.: 10/568,043 Docket No.: 4290220019
Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN
DERIVATISATION AND CONJUGATION
Replacement Sheet 2/23

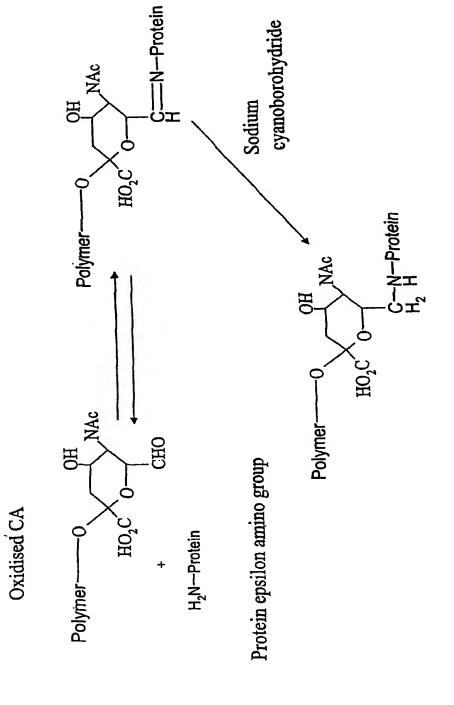
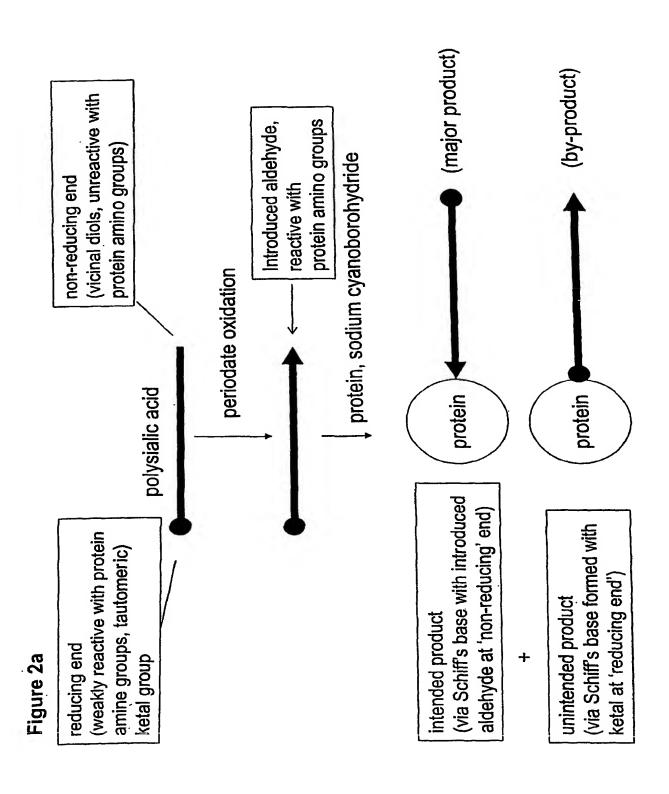


Figure 1b

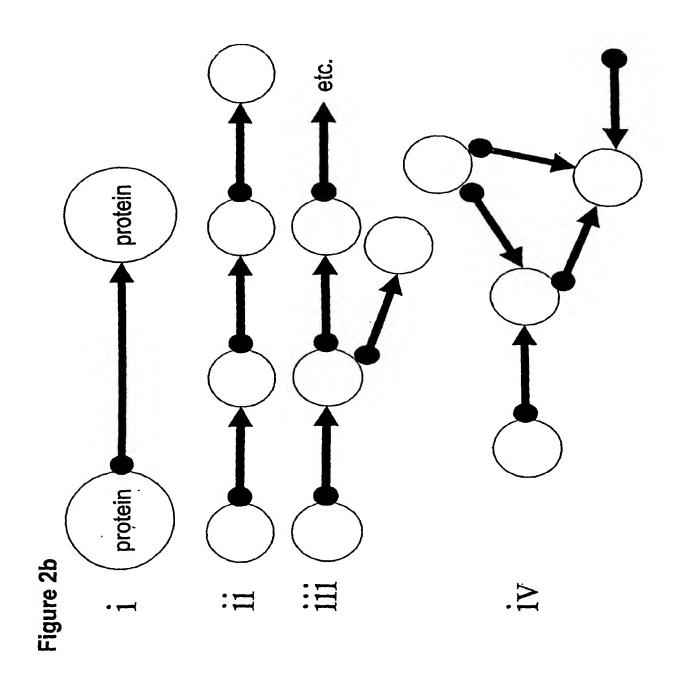
Stable secondary amine

Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 3/23



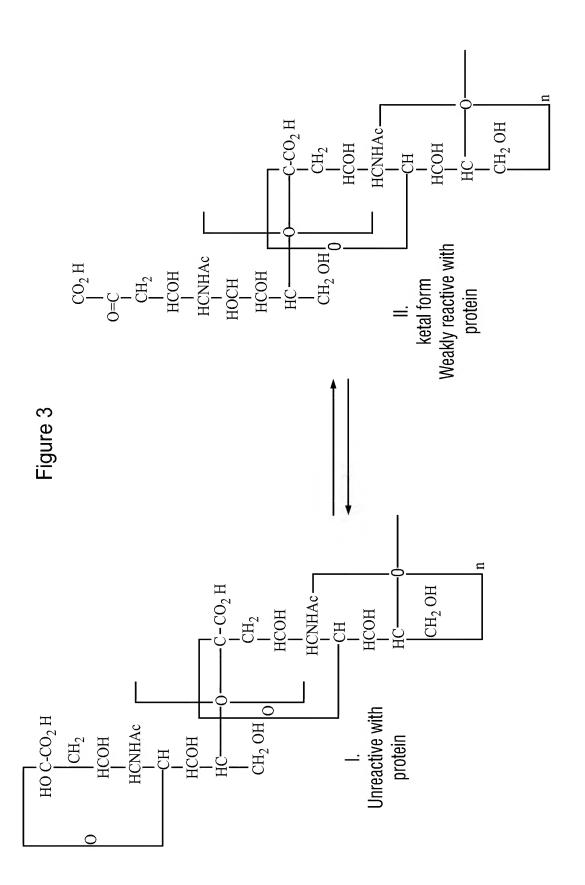
App. No.: 10/568,043 Docket No.: 429022001900 Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION Replacement Sheet 4/23



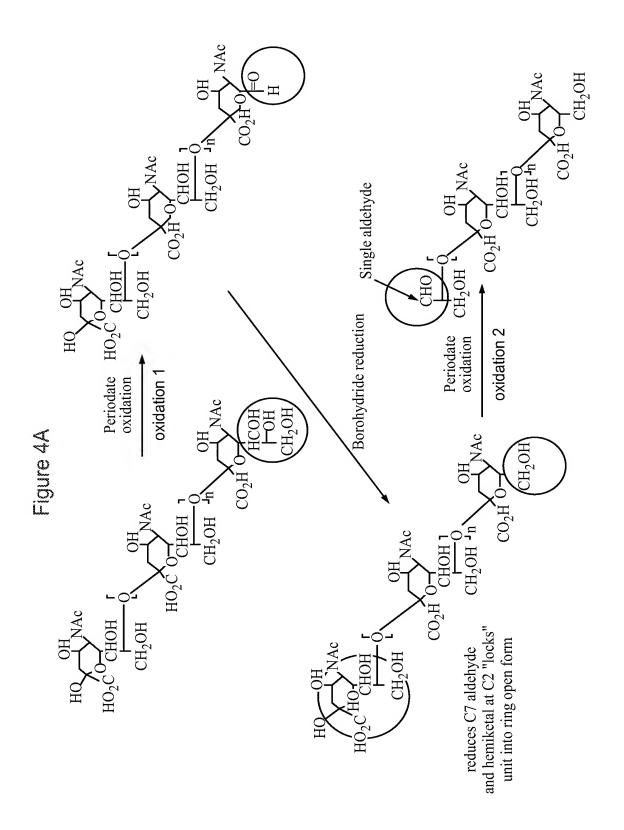
App. No.: 10/568,043 D Inventor: Sanjay JAIN et al. Docket No.: 429022001900

Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 5/23



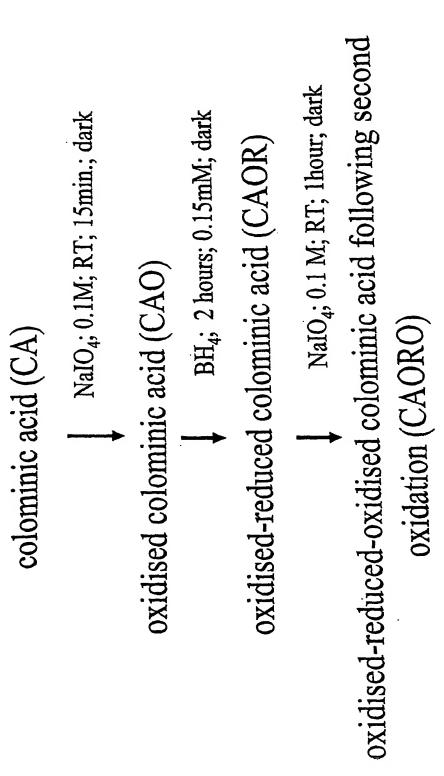
App. No.: 10/568,043 Docket No.: 4290220019
Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN
DERIVATISATION AND CONJUGATION
Replacement Sheet 6/23



Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

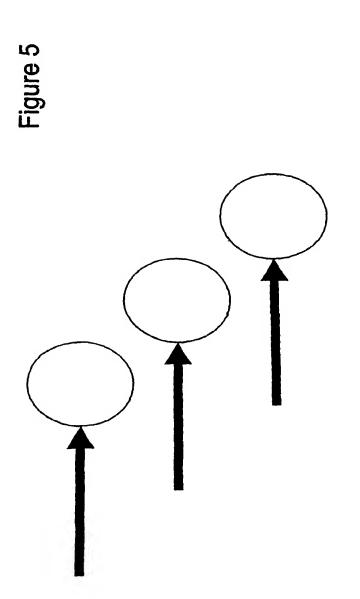
Replacement Sheet 7/23

Figure 4b



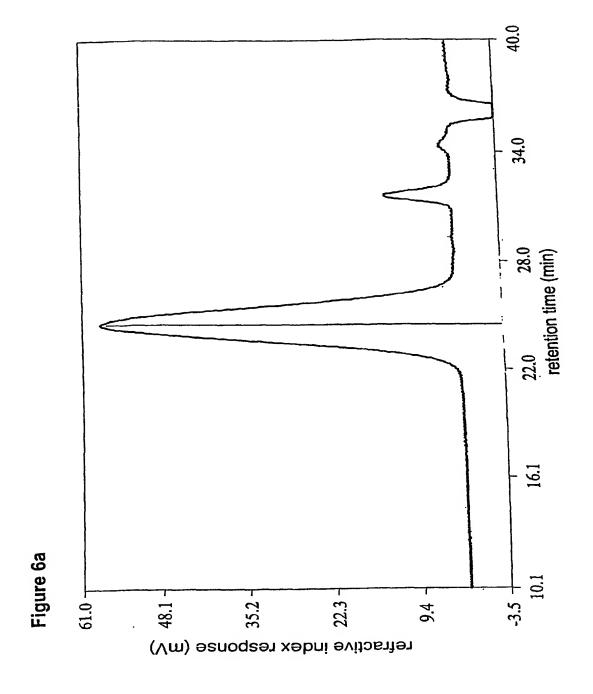
App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

Replacement Sheet 8/23

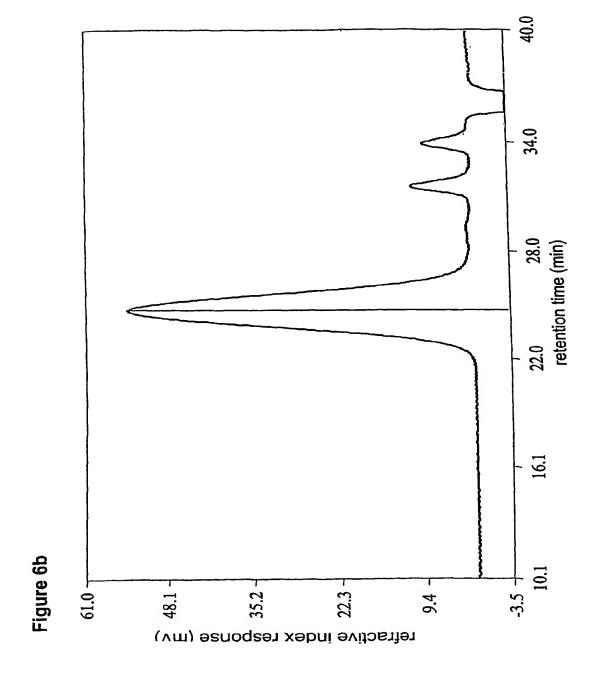


Monofunctional polysialic acid cannot form unintended by-products described for periodate-oxidised natural polysialic acid in Fig. 1

App. No.: 10/568,043 Docket No.: 4290220019
Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN
DERIVATISATION AND CONJUGATION
Replacement Sheet 9/23

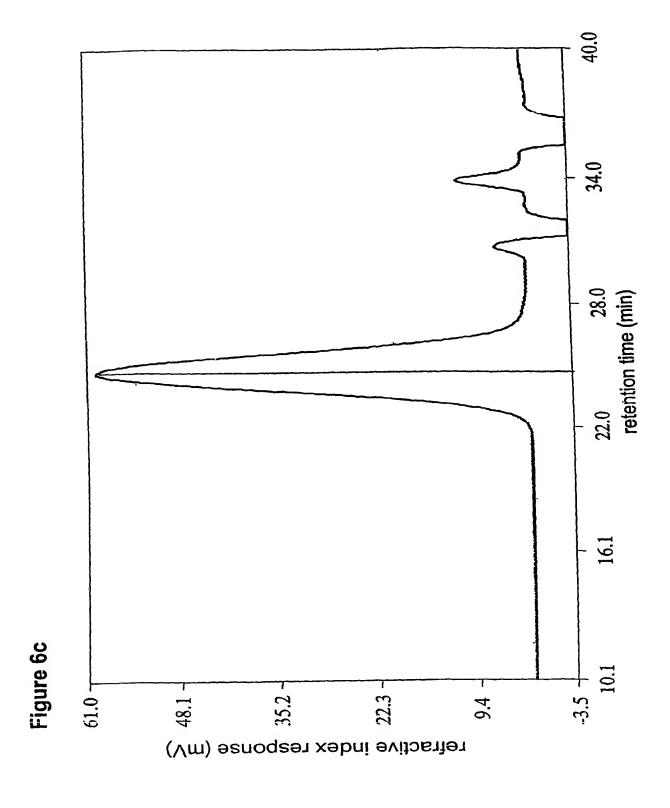


App. No.: 10/568,043 Docket No.: 4290220019
Inventor: Sanjay JAIN et al.
Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION
Replacement Sheet 10/23



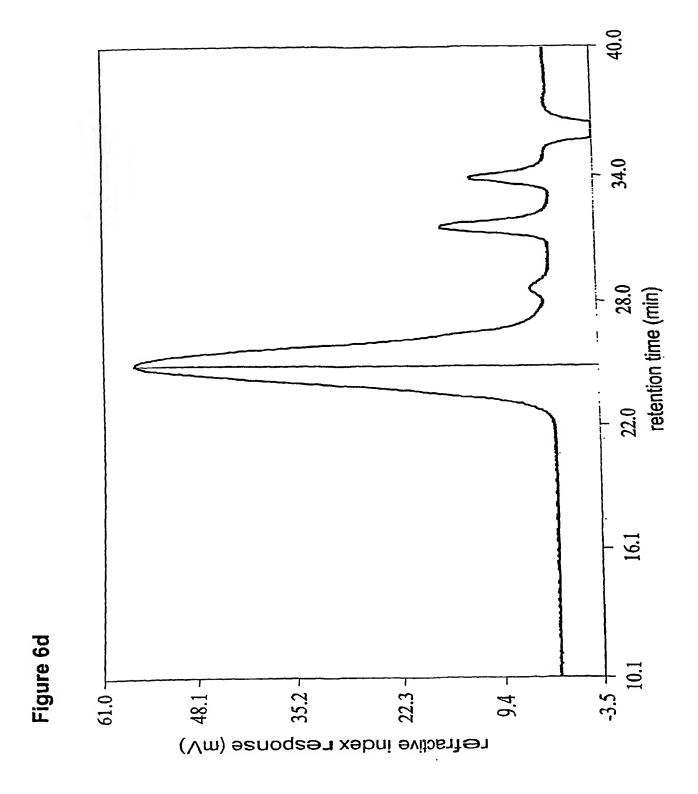
App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

Replacement Sheet 11/23



App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

Replacement Sheet 12/23



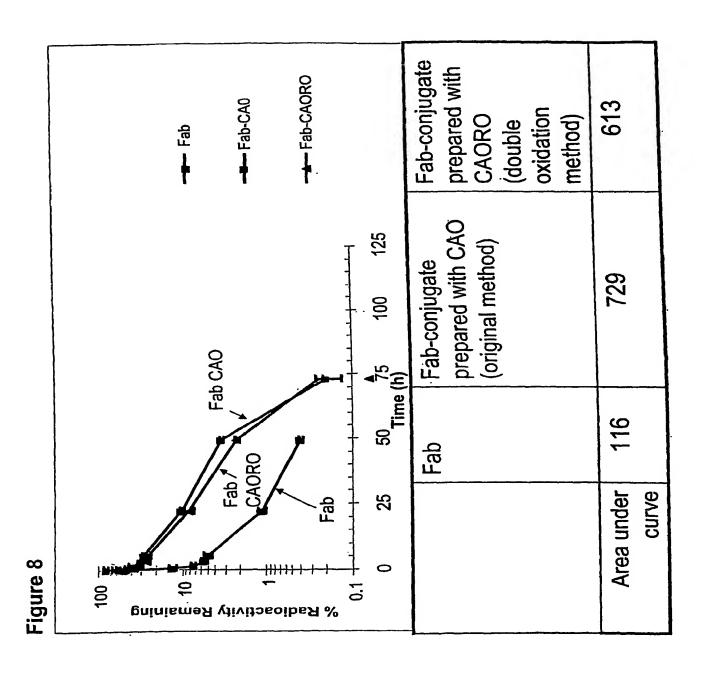
4.Fab-CAORO (new method) 1.M.w.markers 2.Fab+CA0R 3.Fab 5 Figure 7 3 250 တ္တ 8 20

molecular mass kDa

App. No.: 10/568,043 Docket No.: 429022001900 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION Replacement Sheet 13/23

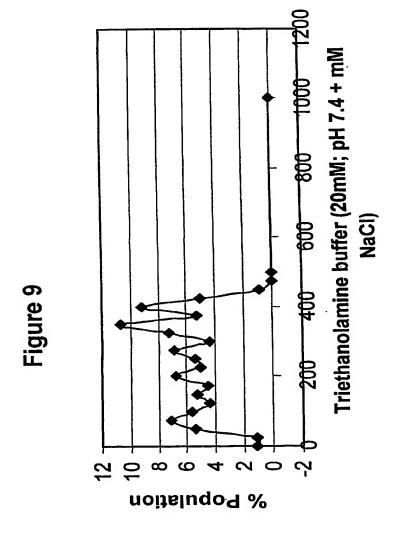
Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 14/23



App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

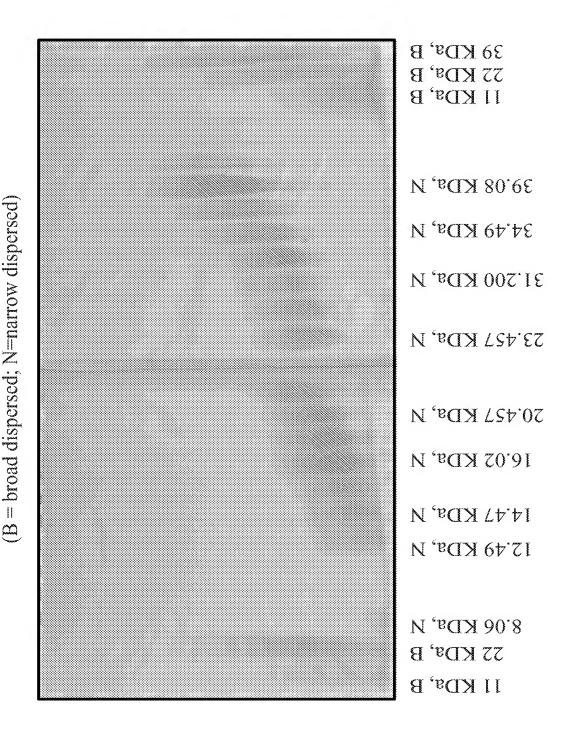
Replacement Sheet 15/23



Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 16/23

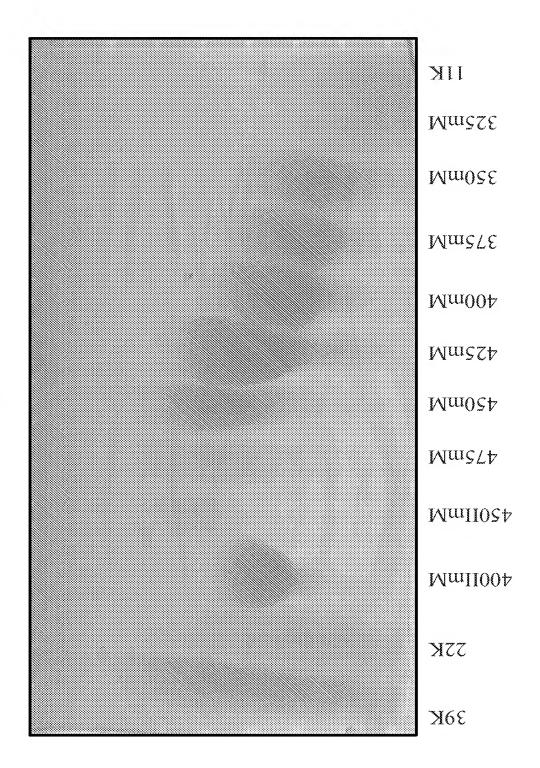
Figure 10: A Typical Native Page of Colominic Acid Fractions with M.W.



App. No.: 10/568,043 D Inventor: Sanjay JAIN et al. Docket No.: 429022001900

Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 17/23



m g o

Figure 12: A Typical GPC Chromatogram for CA Fractions

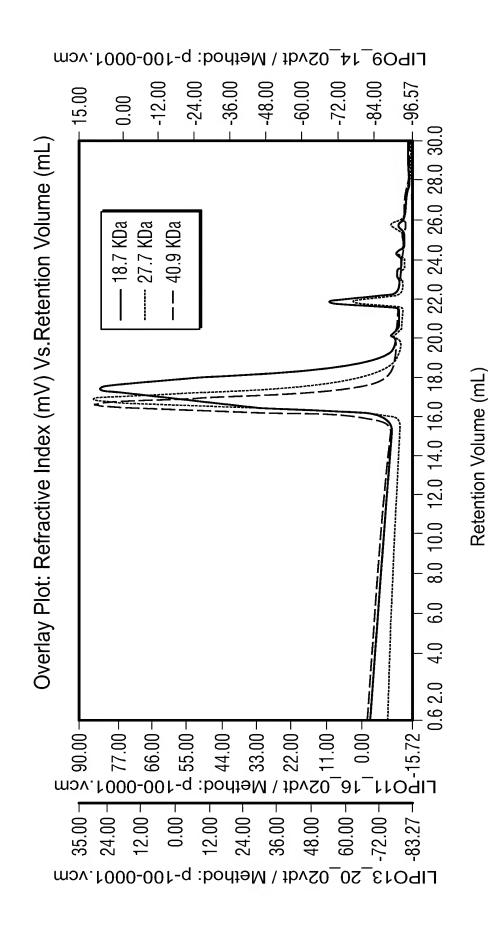


Figure 12

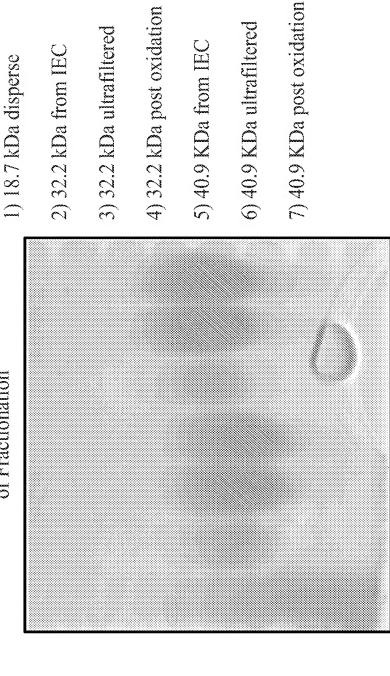
Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION Replacement Sheet 18/23

App. No.: 10/568,043 Docket No.: 429022001900 Inventor: Sanjay JAIN et al.

Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

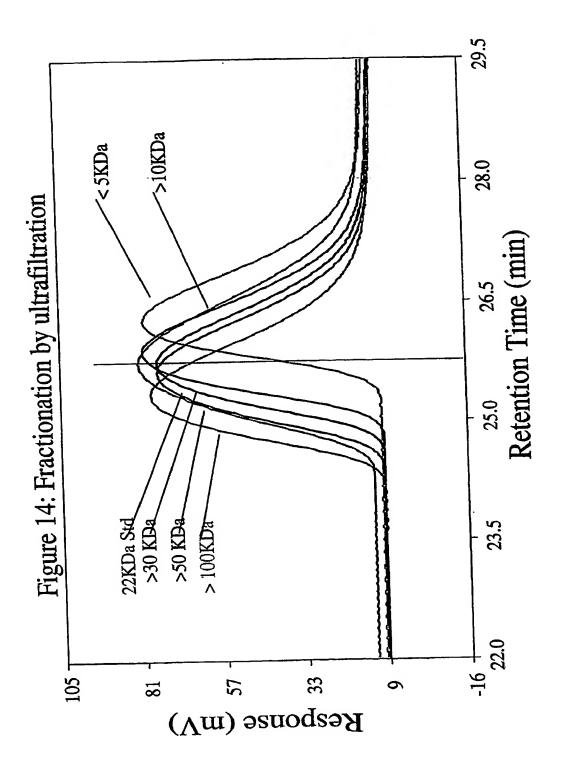
Replacement Sheet 19/23

Figure 13: Colominic Acid Samples from Different Steps of Fractionation



Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION

Replacement Sheet 20/23



App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATISATION AND CONJUGATION Replacement Sheet 21/23

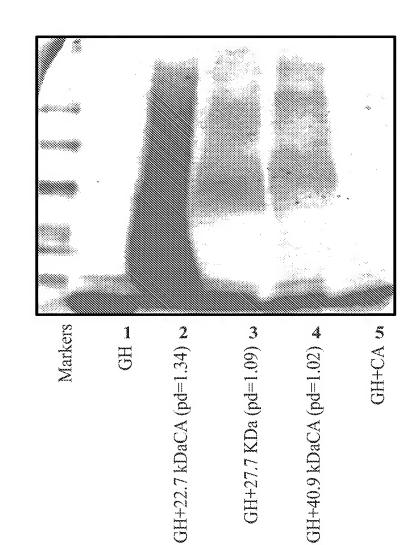
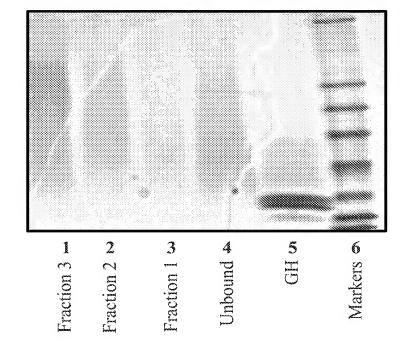


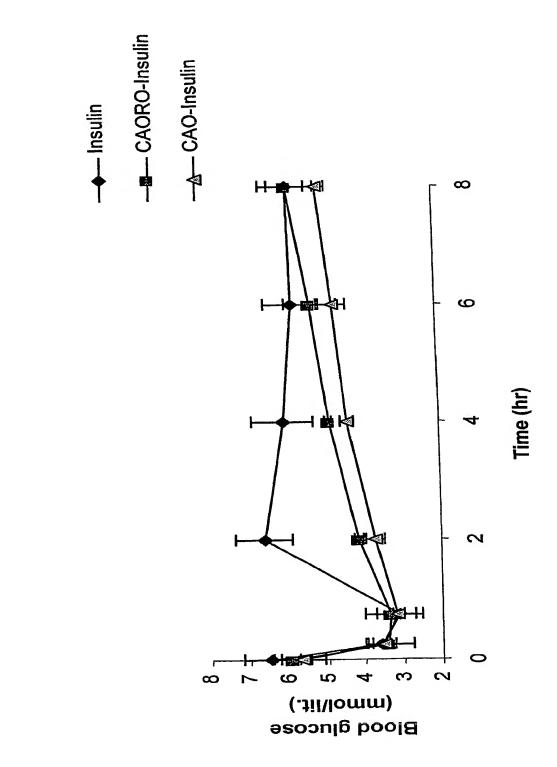
Figure 16

Figure 15



App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

Replacement Sheet 22/23



App. No.: 10/568,043 Docket No.: 4290220019 Inventor: Sanjay JAIN et al. Title: SIALIC ACID DERIVATIVES FOR PROTEIN DERIVATION AND CONJUGATION

Replacement Sheet 23/23

Figure 18

Table 6: Ion exchange chromatography of CA22.7: Scale up (900

Sample (in 20mM	M.W. (Pd)	M.W. (Pd)
buffer+mM NaCl, pH7.4)	12.5 g batch	25 g batch
350 mM	15490 (1.008)	10.470 (1.173)
375 mM	19960 (1.010)	24659 (1.019)
400 mM	25829 (1.019)	29573 (1.018)
425 mM	33763 (1.023)	34160 (1.011)
450 mM	46880 (1.058)	44400 (1.013)
475 mM		28500 (1.376)